

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A system for extracting a gaseous fluid to be ~~analysed~~ analyzed from a process environment, comprising

a probe (~~S~~) for extracting said gaseous fluid, comprising a first tubular element (~~2~~), which can be positioned within the interior of the process environment, the ~~said~~ first tubular element having at one end a gas aspiration opening (~~TS~~) and defining an internal cavity (~~CA~~), and a second tubular element (~~1~~) extending within the cavity (~~CA~~) of the first tubular element (~~2~~), the ~~said~~ second tubular element being operable to inject the ~~said~~ gaseous fluid into the interior cavity (~~CA~~) towards the ~~said~~ aspiration opening of the first tubular element (~~2~~) and from there again into the process environment,

aspiration means (~~40, C~~) for aspirating the gaseous fluid from the process environment through the cavity (~~CA~~) of the ~~said~~ first tubular element (~~2~~) of the probe (~~S~~),

take off means (~~41, PM~~) connected to the ~~said~~ aspiration means (~~40, C~~) for taking off a fraction of the ~~said~~ gaseous fluid, the ~~said~~ take off means being further connected to analyzer means (~~AG~~) for analysis of the ~~said~~ gaseous fluid, and

re-injection means (~~50, C~~) for re-injecting the ~~said~~ gaseous fluid into the process environment through the second tubular element (~~1~~),

~~characterized in that the~~ wherein said aspiration means (~~40, C~~) and the ~~said~~ re-injection means (~~50, C~~) share compressor means (~~C~~), said compressor means having an aspiration side and a delivery side, wherein the ~~said~~ first tubular element is fluidly connected to control valve means (~~EV2G~~) operable to fluidly connect said first tubular element selectively with one of the ~~said~~ aspiration side and said delivery side of the compressor means, and

~~in that~~ wherein the ~~said~~ second tubular element is disposed in fluid communication with the delivery side of said compressor means through a reservoir

(S2G), the said second tubular element being throttled in such a way to accelerate the said gaseous fluid flowing through it and, at the same time, to allow an accumulation of the said gaseous fluid upstream within said reservoir,

in such a way that the system can assume an aspiration condition, wherein the gaseous fluid is aspirated through the said first tubular element and is partially re-injected through the said second tubular element and partially accumulated by the said reservoir, and a back washing condition, wherein the gaseous fluid is released by the said reservoir through the said first tubular element by means of activation of the said control valve means (EV2G).

2. (Currently Amended) A system according to Claim 1, ~~in which~~ wherein the end of the second tubular element (1) disposed on ~~the side of the aspiration opening, that is to say a~~ the process environment side of the aspiration opening, is provided with a nozzle (UG).

3. (Currently Amended) A system according to Claim 1 ~~or 2~~, in which the said first (2) and second (1) tubular element are coaxial.

4. (Currently Amended) A system according to Claim 3, ~~including~~ further comprising connector elements (CR,T), pierced nuts (DT) and gas tight seals operable to assemble the said first (2) and second (1) tubular element and to render the second tubular element (1) slidable with respect to the first tubular element (2).

5. (Currently Amended) A system according to ~~any preceding claim~~ claim 1, further ~~including~~ comprising a cooling jacket (CRA) disposed around the said first tubular element (2).

6. (Currently Amended) A system according to Claim 5, ~~in which~~ wherein the said cooling jacket is disposed in such a way as to define an inter space (IN) interposed between the said jacket and the first said tubular element (2).

7. (Currently Amended) A system according to Claim 5, wherein ~~or 6, in which~~ the said cooling jacket is assembled in a separable manner from the said first tubular element (2) of the probe (S).

8. (Currently Amended) A system according to ~~any of Claims from 5 to 7, in which~~ claim 5, wherein the ~~said~~ cooling jacket is connected in fluid communication with a low temperature refrigerator with a closed fluid circuit.

9. (Currently Amended) A system according to ~~any preceding claim~~ claim 1, further ~~including~~ comprising a shielding element (~~CP~~) disposed in proximity to the ~~said~~ aspiration opening (~~TS~~) .

10. (Currently Amended) A system according to ~~any preceding Claim~~ claim 1, further ~~including~~ comprising decanter means (~~D~~) and drying means (~~RE~~) disposed downstream of the probe (~~S~~) in such a way as further to reduce the dust and the condensate in the ~~said~~ gas.

11. (Currently Amended) A system according to ~~any preceding Claim~~ claim 1, further ~~including~~ comprising a vacuumeter (~~Vg~~) connected to the first tubular element (2) of the probe (~~S~~) and a manometer (~~Mg~~) connected to the second tubular element (4) of the probe (~~S~~) for monitoring the operation conditions of the probe.

12. (Currently Amended) A method for extracting and re-injecting a gaseous fluid ~~to be analysed~~ from and to process environment, the ~~said~~ method using[[:]]

a probe (~~S~~) for extracting said gaseous fluid, comprising a first tubular element (2), which can be ~~position~~ positioned within the interior of the process environment, the ~~said~~ first tubular element having at one end a gas aspiration opening (~~TS~~) and defining an internal cavity (~~CA~~), and a second tubular element (4) extending within the cavity (~~CA~~) of the first tubular element (2), the ~~said~~ second tubular element being operable to inject the ~~said~~ gaseous fluid into the interior of the cavity (~~CA~~) towards the ~~said~~ aspiration opening of the first tubular element (2) and from there again into the process environment,

wherein the method ~~comprise~~ comprises the following ~~step~~ steps:

aspirating the gaseous fluid from the process environment through the cavity (~~CA~~) of the ~~said~~ first tubular element (2) of the probe (~~S~~),

taking off a fraction of the ~~said~~ gaseous fluid for analyzing ~~it~~ the gaseous fluid,

re-injecting the ~~said~~ gaseous fluid into the process environment through the ~~said~~ second tubular element ~~(1)~~ of the probe ~~(S)~~,

~~characterized in that the~~ wherein said gaseous fluid is only partially re-injected into the process environment, a portion of the gaseous fluid being accumulated apart, and in that the method comprise a back washing step, wherein the accumulated gaseous fluid is released into the process environment through the ~~said~~ first tubular element.

13. (Previously Presented) A method to claim 12, wherein the said back washing step is preformed cyclically.

14. - 17. (Cancelled)